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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/472,989	12/28/1999	SHUNSUKE INOUE	684.2946	9449

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NEW YORK, NY 10112

EXAMINER

ABDULSELAM, ABBAS I

ART UNIT PAPER NUMBER

2674

DATE MAILED: 05/05/2004

21

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/472,989

Applicant(s)

INOUE ET AL.

Examiner

Abbas I Abdulsalam

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/07/04 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 3-7 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omae et al. (USPN 5963283) in view of Hardt (USPN 5387901), Matsumoto et al. (USPN 5694190) and Hiroki (USPN 6628253).

.Art Unit: 2674

Regarding claims 1 and 7, Omae teaches about a liquid crystal panel and projection display device for enlarging and projecting to a screen (176). Omae teaches images displayed on a small liquid crystal panel (177) are enlarged and projected using project lens (174). In connection to liquid crystal panels, Omae teaches an LCD layer with sides of substrate (11, 12) as shown in Fig 1 and further teaches specific electrode pattern on a circuit board, and electrode substrates in pixel display area. See column 1, lines 9-15, 20-23, column 2, lines 6-15, and column 4, lines 13-21, and Fig 21. However, Omae does not teach about a projection holder fixed on the circuit board for holding the display panel and positioning means for positioning the holder and projection lens support. Hardt on the other hand teaches lens members (48, 48b) inserted in their respective socket cavities (128, 130), the circuit board (102) supported behind the mounting socket structure (100) to position the upper LED device (46a). See col. 7, lines 36-49, Fig and 10.

Therefore, it would have been obvious to one having skill in the art at the time of the invention was made to modify Omae's projection display device to adapt Hardt's configuration of light assembly structure as shown in Fig 2. One would have been motivated in view of the suggestion in Hardt that the socket structure (100), socket cavities (128, 130) and circuit board (102) are functionally equivalent to the desired projection holder, positioning means and circuit board respectively. The use of socket structure along with the circuit board helps function a display system with light emitting device.

Omae has been described above. However, Omae does not disclose a scenario where the first electrodes of the display panel and the second electrodes of the circuit board are electrically connected by way of a connector such that first electrodes are brought into contact with a

Art Unit: 2674

connector. Matsumoto on the other hand teaches a connector (4) having a conductive contact (4a), and having a contact with the signal input electrode portion (1a) when the liquid crystal panel (1) and the circuit board (5) are connected together. See col. 4, lines 38-54 and Fig 1.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Omae's projection display device to include Matsumoto's electrode connections. One would have been motivated in view of the suggestion in Matsumoto that the input electrode, the connector along with the conductive contact area equivalently provide the desired configurations of the electrodes with a connector. The use of input electrode, connector and conductive contact area helps function LCD device as taught by Matsumoto.

Omae does not teach, "Shift registers disposed along said four sides, and converters for converting digital signals to analog signals, said converters being disposed along opposite two sides." Hiroki on the other hand teaches a signal processing circuit (106) including D/A conversion circuits (109, 110), each having a general structure and can be provided either on the same substrate as the panel or on a substrate different from a liquid crystal panel. See col. 9, lines 11-18, and col. 13, lines 57-61 and Fig. 6. Further, Hiroki teaches the use of shift registers of plural phases with respect to plurality of signal lines (col. 14, lines 25-30, Fig. 1 (105)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omae's projection display system to incorporate Hiroki's plurality of D/A conversion circuit (109, 110), and shift registers (105) as shown on Fig. 1. One would have been motivated in view of the suggestion in Hiroki that the D/A conversion circuits (109, 110), and shift registers (105) as configured in Fig. 1 are functionally equivalent to the desired

Art Unit: 2674

"shift registers" and converters respectively. The use of D/A conversion circuits and shift registers helps function a projection type picture display device as taught by Hiroki.

Regarding claims 3-4, See Hardt's Fig 10 (128, 130). Hardt also teaches lens portion (48) being outwardly receivable through lens opening (40).

Regarding claim 5, See Matsumoto's Fig 1.

Regarding claim 6, Omae teaches a liquid crystal panel (177) with respect to the formation of optical images. Omae teaches the formation as a change in light scattering is converted to a change in brightness on the screen (176). Column 18, lines 44-55.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following art is cited for further reference.

U.S. Pat. No. 5,499,036 to Hauck

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe** can be reached at **(703) 305-4709**.

Art Unit: 2674

Any response to this actions should be mailed to:

Commissioner of patents and Trademarks

Washington, D.C. 20231

or faxed to

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or preceding should be directed to the Technology center 2600 Customer Service office whose telephone number is (703) 306-0377.

Abbas Abdulsalam

Examiner

Art Unit 2674

April 27, 2004


XIAO WU
PRIMARY EXAMINER